

Infant mortality is the death of a child that occurs in the first year of life (between 0-364 days). Infant mortality is a key measure of population health.

The infant mortality rate (IMR) in Pasco County has ranged from 5.5 to 6.6 infant deaths per 1,000 live births between 2005-2014. The three-year rolling infant mortality rate for 2012-2014 was 6.1. This is a decline from the highest rate during 2005-2007 of 6.6 infant deaths per 1,000 live births. The lowest IMR of 5.5 occurred during 2010-2012. During 2005-2014, 307 infants have died before their first birthday.

For Pasco County, there were no statistically significant annual or quarterly trends seen. The three-year rolling rates provide the best overview of what is occurring in the county, over time. The infant mortality rate in Pasco county has remained relatively stable from 2005 to 2014.

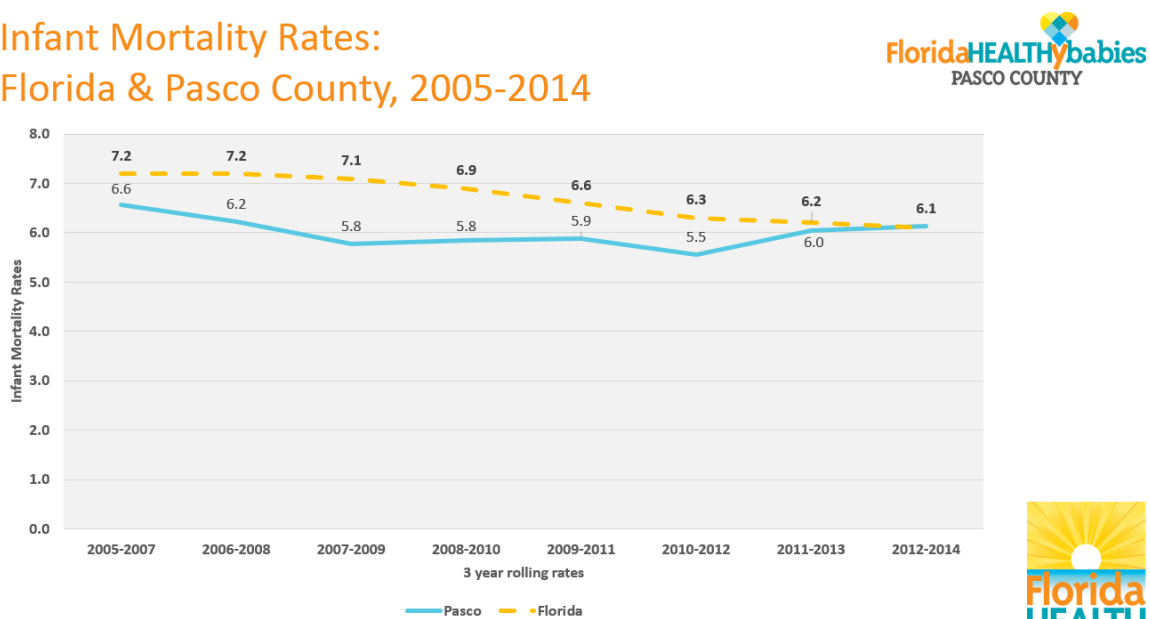
The top three causes of infant mortality in Pasco County have remained Sudden Unexpected Infant Death (SUID), congenital anomaly/birth defect, and prematurity/low birth weight. Infant mortality rates were 1.3, 1.0, and 0.9, respectively.

Factors that affect infant mortality:

- Low birth weight/prematurity – lower than Florida, but similar pattern.
- Poor preconception/interconception health - similar to Florida.
- Unsafe sleep practices and environments – higher than Florida, may be an issue due to SUIDs.
- Social determinants – generally better than Florida, with exception to domestic violence report.

Figure 1: Infant Mortality Rates: Florida and Pasco County, 2005-2014

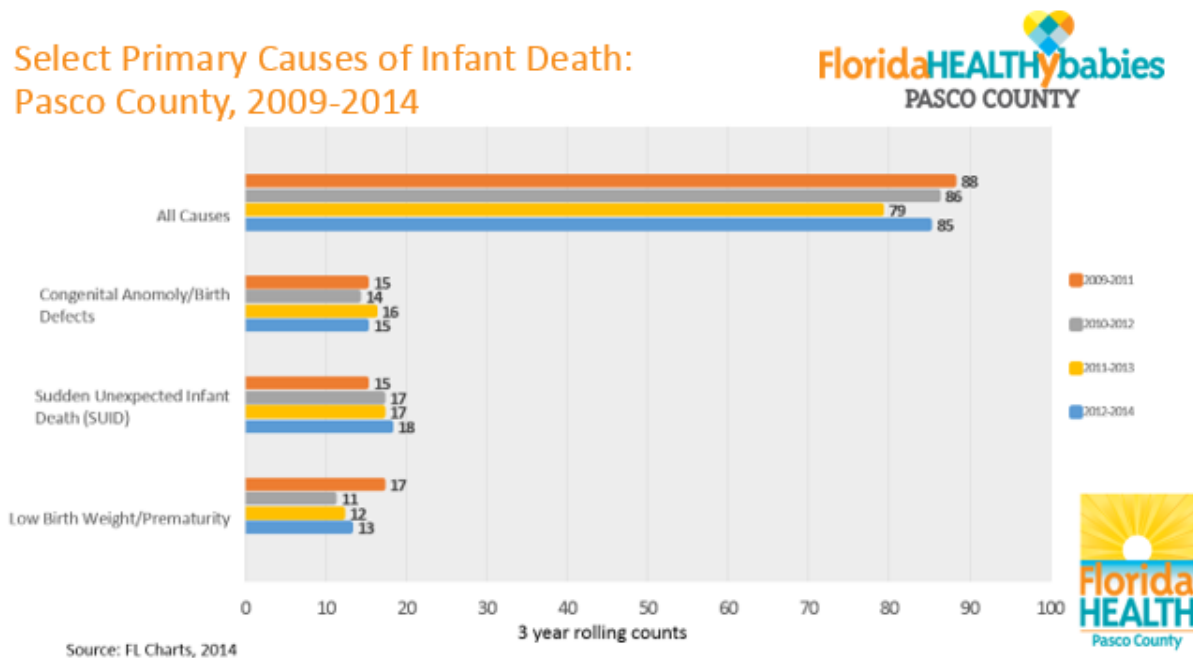
Infant Mortality Rates: Florida & Pasco County, 2005-2014



Source: FL Charts, 2014

Three year rolling rates are used in Figure 1, this allows a clearer picture of what is occurring in Pasco County, over time. Yearly data displays spikes which have no statistical significance and appear at random compared to other years. Over time, the IMR in Pasco has remained relatively stable. Whereas, Florida has shown a declining trend. In 2012-2014 Pasco and Florida had the same IMR of 6.1.

Figure 2: Select Primary Causes of Infant Death: Pasco County, 2009-2014



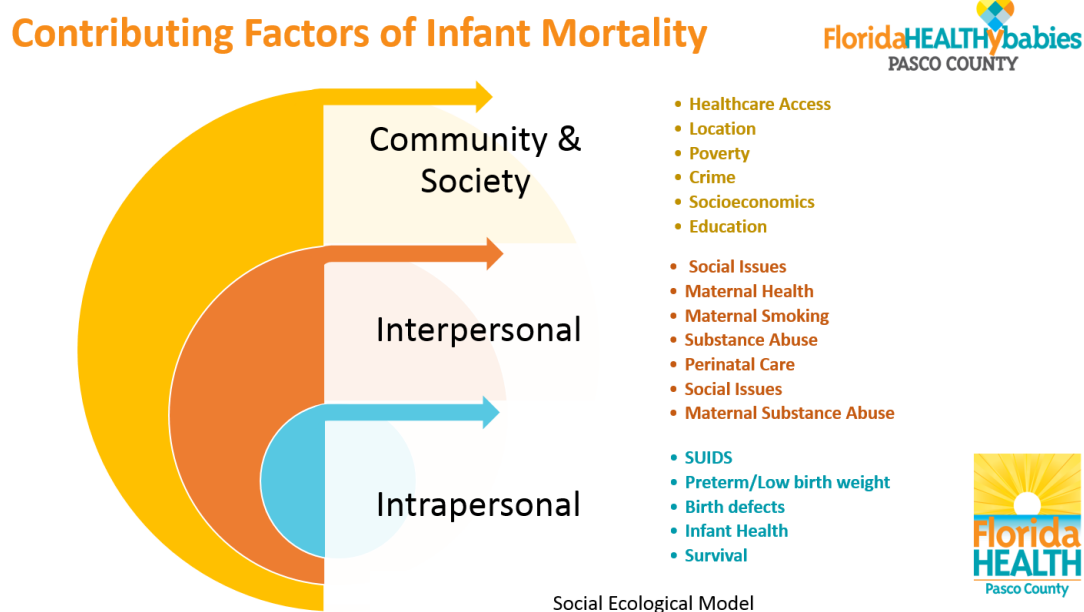
The total number of all cause infant deaths in 2014 was 31. Figure 2 displays the leading categorical causes of death of 2012-2014 using 3 year rolling counts were Sudden Unexpected Infant Death (18), Birth Defects/Congenital Anomaly (15) and Low Birth Weight/Prematurity (13). The rolling counts are a sum of the selected years, not an average.

There is not a significant trend over time (from 2005-2014) regarding infant death. All rates must be interpreted with caution, as the counts are lower than 20 for each cause of death. While there is no statistically significant trend in Pasco, the rates have remained lower than Florida over time with the exception of 2014. Both Pasco and Florida had an IMR of 6.1 infant deaths per 1,000 live births.

Sudden Unexpected Infant Deaths (SUID) is a grouping of causes of infant death: Sudden Infant Death Syndrome (SIDS), suffocation/strangulation in bed or elsewhere, and unknown cause of death. Studies have found that many SUIDs that occur after an infant has been placed to sleep had common elements of infant sleep position, space and environment. Health prevention efforts now focus on promotion of back-to-sleep position placement, unshared (with no people/items/objects in) sleep space and safe sleep bedding/surfaces.

Substance exposed newborns has been a focus, however, noxious substances exposure or withdrawal was not identified as a primary cause of death in deaths occurring from 2005-2014, but may be a contributing factor to low birth weight babies. Additional data queries are needed to determine if noxious substances exposure or withdrawal were listed as contributing factors or were present at time of infant death.

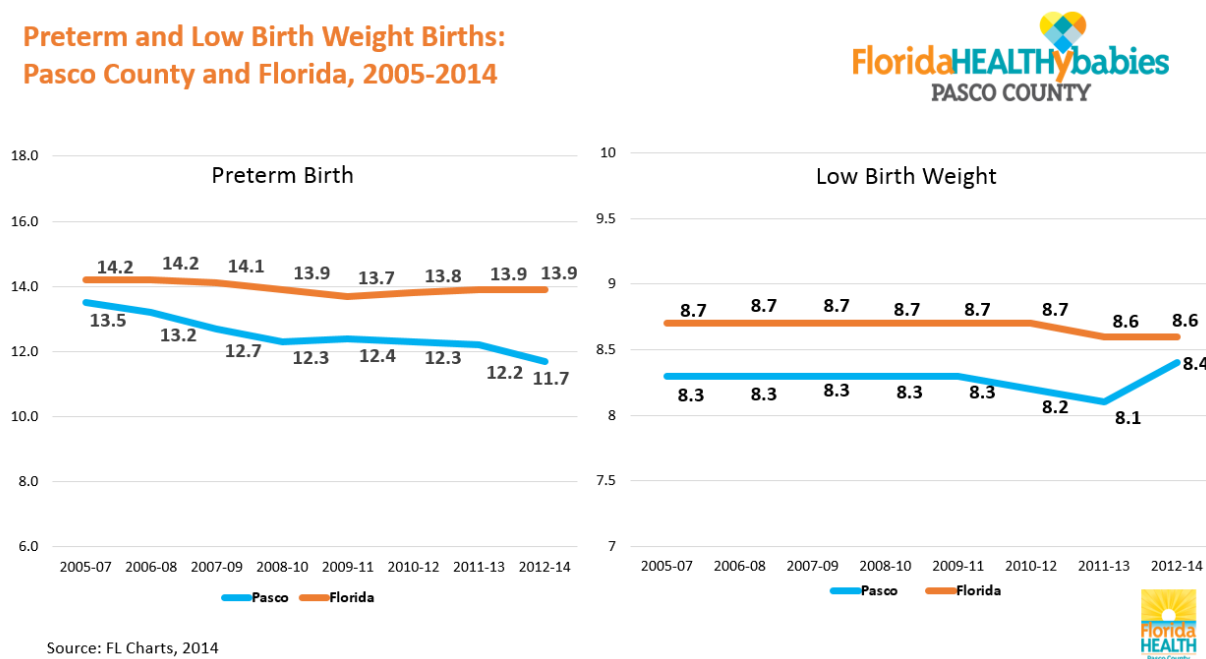
Figure 3: Contributing Factors of Infant Health



In addition to the direct or primary causes of death and intrapersonal factors, there are a number of other contributing factors to infant health. Community and societal factors such as socioeconomic, education attainment, crime rates, health care and support can contribute to infant health outcomes. A number of social issues, health status of the mother, perinatal care and the environment serve as interpersonal factors in infant health and mortality. Figure 3 displays the complex and interactive ways each levels can affect and effect infant health and mortality.

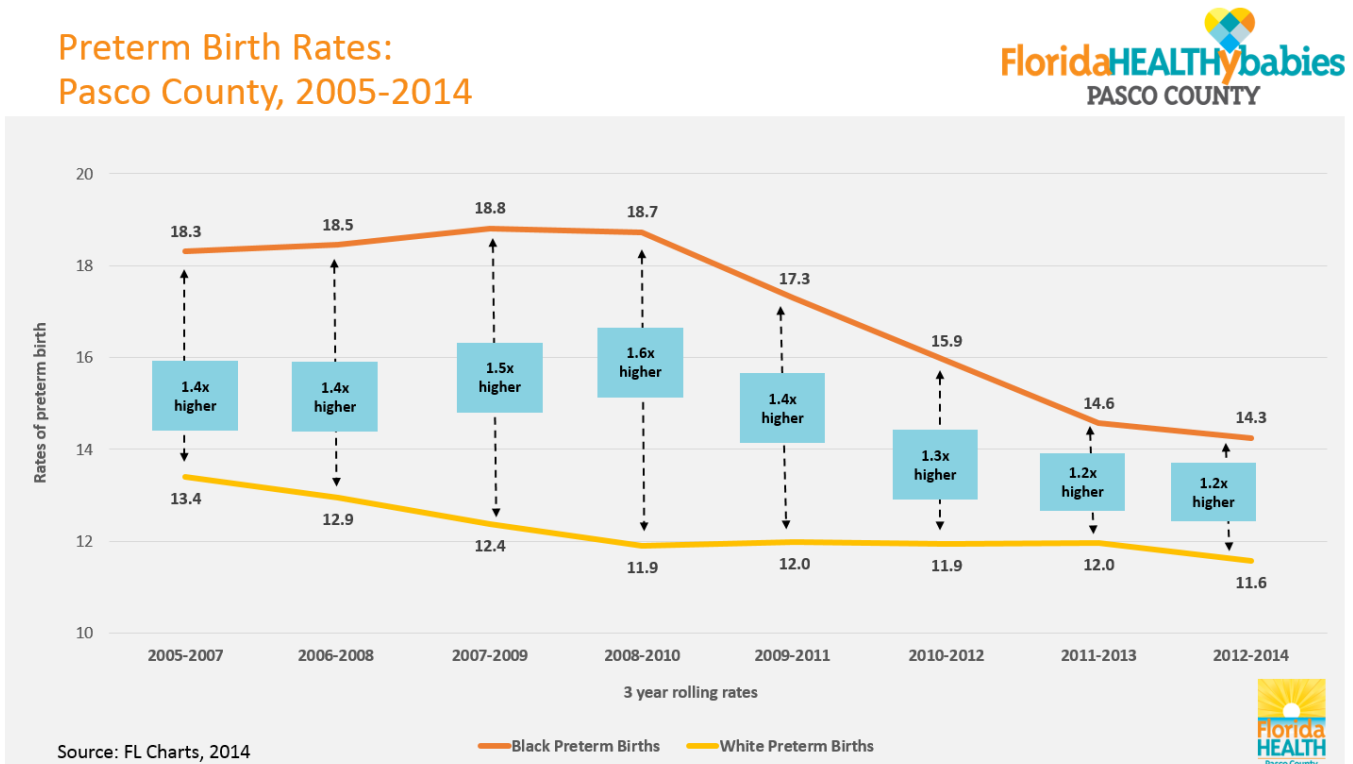
Figure 4: Preterm and Low Birth Weight Rates

Preterm and Low Birth Weight Births: Pasco County and Florida, 2005-2014



Low birth weight and prematurity are leading causes of infant death in Pasco. Pasco's trends are consistently lower than Florida's; however, both trends have remained relatively flat. Figure 4 displays the three year rolling rates for preterm birth and low birth weight. The preterm birth rate for 2012-2014 was 11.7 and 13.9 for Pasco and Florida, respectively. Pasco has seen lower rates of preterm birth than Florida since 2005. The three year rolling low birth weight rate for 2012-2014 was 8.4 and 8.6 and for Pasco and Florida, respectively. These rates have remained relatively flat over time.

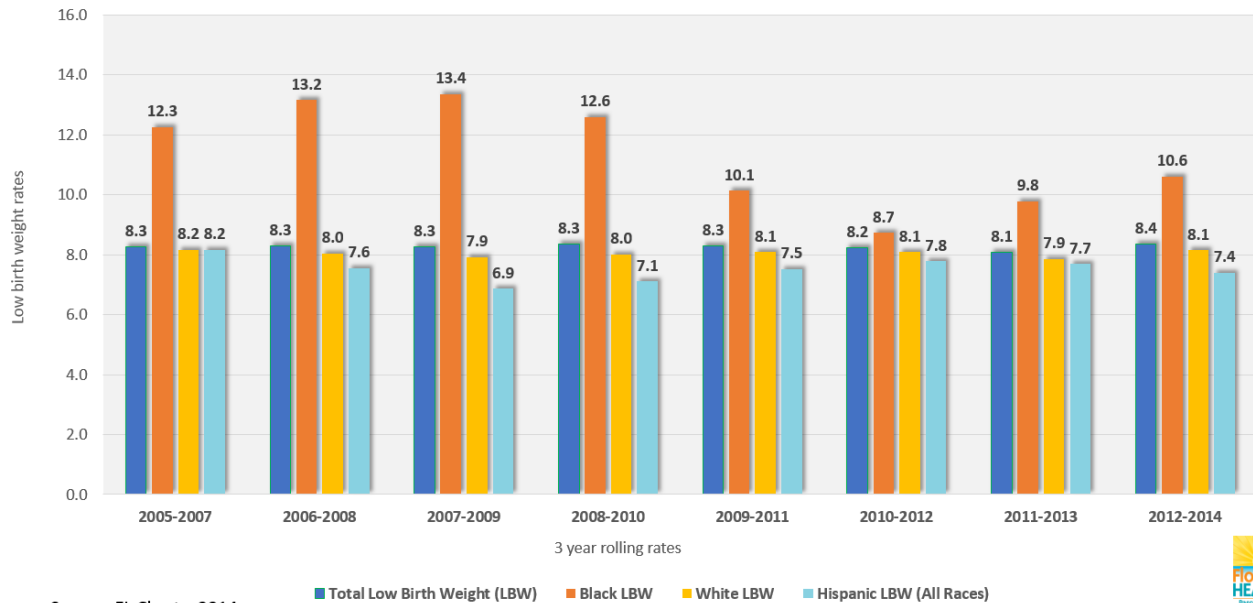
Figure 5: Preterm Birth Rates & Disparity, Pasco



Preterm birth (<37 weeks gestation) and very preterm birth (<32 weeks gestation) are leading causes of mortality and morbidity in infants worldwide. A disparity exists when a health outcome is seen to a greater or lesser extent between populations and is a particular type of health difference that is closely linked with social, economic, and/or environmental disadvantage. Figure 5 highlights the consistent disparity that exists between black and white preterm birth rates in Pasco, despite declines in the two groups. This consistent disparity exists in the state and nationally as well. Black preterm rates remained higher and more distant from the white preterm rates ranging from 1.2 times higher to 1.6 times higher. This stagnation in reducing the disparity is another primary reason to take a concentrated look at preterm birth & infant mortality at a county level.

Figure 6: Low Birth Weight by Race/Ethnicity, Pasco

Low Birth Weight Pasco County, 2005-2014



Preterm term birth is closely linked to low birth weight and very low birth weight - infants weighing less than 2,500 grams and 1,500 grams, respectively. Globally, Low birth weight infants have a 20 times higher risk of death than heavier infants. As seen in Figure 6, there are significant racial/ethnic disparities in preterm-related deaths. Since 2005, black women have consistently given birth to low birth weight infants in Pasco County compared to white and Hispanic women. In 2014, black infants were born at a low birth weight more often than their white or Hispanic counterparts. In 2012-2014 low birth weight rates were 7.4, 8.1, and 10.6 for Hispanic, white, and black infants, respectively.

Figure 7: Interpersonal factors & Smoking

Interpersonal Factors: Pasco County

(↓= low than Florida; ↑= higher than Florida)

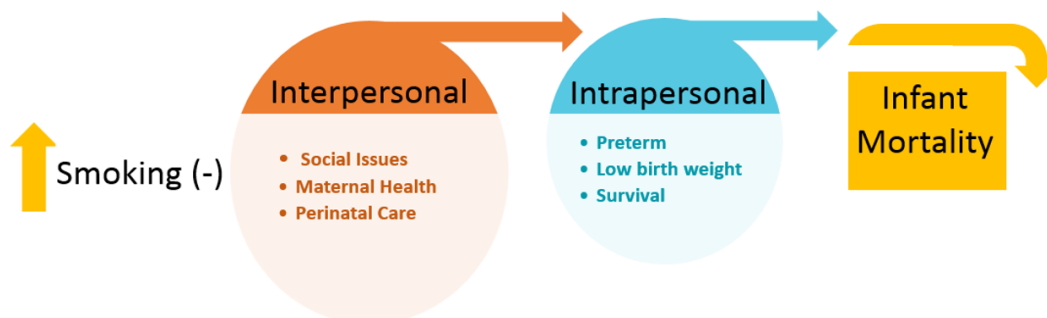


Figure 7 shows categories of interpersonal factors (behavioral, health care, and social factors) that influence infant health (preterm, low birth weight, and survival) which in turn can lead to infant mortality. Pasco's maternal smoking rates continue to be higher than Florida's, 14.5 and 6.5, respectively for 2012-2014. The Pasco rate has remained more than double Florida's since 2005. These trends have remained relatively flat.

Figure 8: Community and Society Actors in Infant Health, Pasco

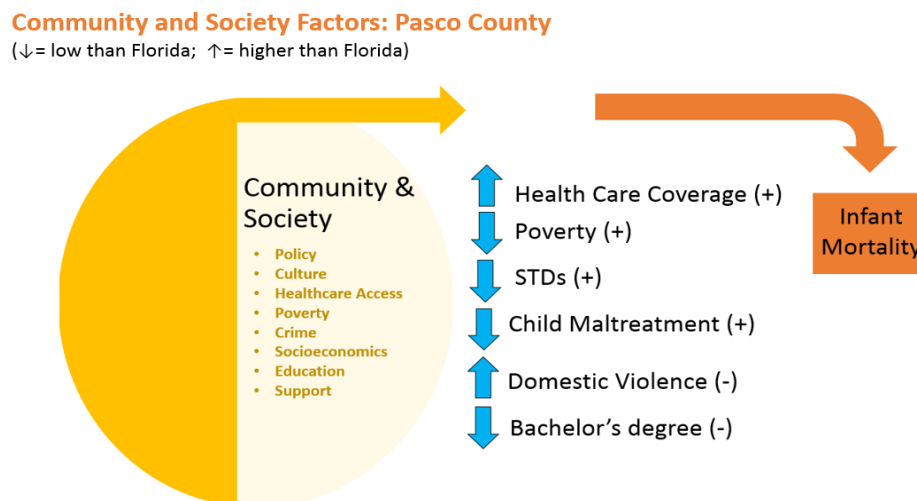


Figure 8 shows categories of community and social factors (policy, access, socioeconomics, etc.) that influence certain health indicators, which can lead to infant mortality, directly or indirectly. Compared to Florida, Pasco County indicators show more health care coverage, less population poverty, lower STD rates, less reports of child maltreatment. However, less bachelor degree attainment and more reports of domestic violence than the state.

Considerations for intervention based on findings include the following:

- Safe infant sleep promotion
- Meet with medical examiner about unknown causes of death cases
- Emphasis on smoking cessation promotion
- Explore possible individual level and community stressors
- Explore racial disparities in preterm and low birth weight rates

Notes: Information obtained from the Florida Department of Health – Pasco County, Healthy Start, Florida Health Babies Initiative, Presentation titled Disparities in Infant Mortality and the Role of Social Determinants of Health.